Washburn-Crosby Milling Complex,
No. 1 Elevator
711-729 South First Street
Minneapolis
Hennepin County
Minnesota

HABS No. MN-69-F

HABS
MINN,
27-MINAP,
20-F-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Rocky Mountain Regional Office
Department of the Interior
P.O. Box 25287
Denver, Colorado 80225

HABS
MINN,
27-MINAP
20-F-

HISTORIC AMERICAN BUILDINGS SURVEY

WASHBURN-CROSBY MILLING COMPLEX,
NO. 1 ELEVATOR

HABS No. MN-~~69F~~ 69-F

Location: 711-729 South First Street, Minneapolis, Hennepin County, Minnesota

USGS Minneapolis South Quadrangle, Universal Transverse Mercator Coordinates: Zone 15; 479740:4980480; 479860:4980420; 479820:4980360; 479700:4980400

Present Owner: Riverside Industries, Inc.
P.O. Box 1125
Minneapolis, Minnesota 55440

Present Occupant: Leased by General Mills, Inc.
Minneapolis, Minnesota

Present Use: Grain Storage

Significance: The No. 1 Elevator is part of the larger Washburn-Crosby Milling Complex. It is situated in the heart of the west side milling district which gave rise to Minneapolis' title of the flour milling capital of the world in the late 19th and early 20th century. The elevator was among the first large scale concrete grain storage facilities to be built in the country with exposed circular bin construction. Its massiveness and bold architectural form has given the milling complex its unique presence on the river bank. The large bins were constructed out of concrete, a new innovation of the time, through the use of slipforms, invented to allow the pour of concrete to be continuous throughout their 100 foot heights.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1906-1908

2. Architects: It appears that proposed plans were drawn up as early as 1902 by Barnett & Record Engineers and Contractors of Minneapolis, Minnesota. Subsequent plans dated 1906 and 1907 were drawn up by Haglin Stahr Co. - Engineers & Contractors. Building Permit #A 9326 was issued to Haglin-Stahr Company on February 2, 1906 for a grain elevator with an estimated cost of $201,000.00.

3. Original & subsequent owners: The No. 1 Elevator was originally built for, and owned by the Washburn-Crosby Company, which later became General Mills, Inc.

4. Builder, contractor, suppliers: Haglin-Stahr Company, 228 Lumber Exchange, Minneapolis, Minnesota.

5. Original plans and construction: Plans for the No. 1 Elevator are in the tube files at General Mills, Inc. Corporate Engineering, James Ford Bell Technical Center in Minneapolis, Minnesota. Other plans may exist, as yet unfiled at the Northwest Architectural Archives of Minneapolis, Minnesota. A construction photograph exists at the Minnesota Historical Society.

6. Alterations & additions: Many alterations have taken place since the elevator was constructed. Most of the alterations were minor in nature as evidenced by photographs and inspection of documents and the property. Windows have been added to the original facades and alterations to the existing windows have occurred as well. There is an indication that much equipment has been replaced or modified according to plan listings received from General Mills, Inc. However, this has not been verified. Three large dust collectors located on the north side of the workhouse have been moved. (Minnesota Historical Society photograph). One presently is located on the east side. No structural alterations or additions have occurred to the grain bins or workhouse. The train shed has been extended to connect directly to the "A" Mill. This has been deducted by a thorough review of the building permits although no plans have been found.

B. Historical Context: See HABS No. MN-69 for general information.

The No. 1 Elevator is one of seven major structures making up the Washburn-Crosby Milling Complex. The original Washburn "A" Mill was built in 1894 and destroyed in a huge explosion in 1878. The explosion also destroyed the neighboring Washburn "B" Mill. The "A" Mill was rebuilt only after the construction of the Washburn "C" Mill in 1879. The innovative milling machinery that was first installed in the "C" Mill has subsequently been destroyed, leaving the "A" Mill complex the sole surviving remains of the large Washburn-Crosby milling operations on the west side of the Mississippi River.

Other major structures of the Washburn-Crosby Milling Complex include the Wheat House (1879), the "A" Mill Office (1880), the Humboldt Mill (sometimes called the "E" Mill - built 1878, purchased by Washburn-Crosby (1899), the Utility Building (1814), and the Feed Elevator (1928).

The No. 1 Elevator was built in 1906-1908 for the washing and storing of grain. It was built at a time in which the Washburn-Crosby Company was undergoing an expansion of its food processing capabilities. The elevator consists of 14 reinforced concrete grain bins and a multi-story superstructure which enclosed the mechanical elevators and cleaning equipment. The elevator is flanked on its south side by a metal train shed built at the same time as the elevator. The shed enclosed three unloading pits that fed directly to the mechanical elevators within the elevator. Grain was dumped into these pits from boxcars, then elevated to the top of the superstructure where it was cleaned, it would then be stored in the bins. Retrieval of grain from the bins occurred at the base of the bins where belt conveyors carried the grain to the "A" Mill building.

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: Elevator No. 1 was an innovative structure for its time, in its material and means of construction as well as its functional architectural expression of the cylindrical structure of the elevators which were previously enclosed in rectangular buildings. Constructed after the turn of the century, it was one of the first elevators to be built of concrete using slip forms that allowed a continuous pour of concrete throughout the entire height of the bins. A special yoke was invented by Haglin Stahr to accomplish this. The concrete walls that formed the circular bin structure also provided the support for the workhouse above. The rectangular structures which had previously enclosed grain bins were no longer necessary. By expressing the cylindrical structure of the bins, the utilitarian value of the building was given form. In its unconcealed functional form it represented the feeling of the period which was the hey day of the flour milling industry in which utilitarian value was given form.

2. Condition of fabric: The elevator appears in good condition. As it is still being used for storage of dry commodities it is assumed to be in working order.

B. Description of Exterior:

1. Overall dimensions: The elevator consists of 15 circular bins, arranged in three rows of five each. The total overall length is approximately 126 feet and overal width is 79 feet. The bins are 100 feet in height. Above the bins is a workhouse for the cleaning and distribution of grain. It is 95 feet high at the south elevation and steps down twice to the north. A 42 foot

wide train shed covering three railroad tracks is located to the south. The shed extends the length of the elevator and is 24 feet high.

2. Foundations: The foundations are constructed of reinforced concrete, extending thirty-four feet below the grade of the tracks.

3. Walls: The north, east, and west elevations are formed by the circular storage bins from grade to their tops. Above them the workhouse is located. The east and west sides of it are set back from the edge of the bins about 15 feet and are stepped from the south to the north. The lowest portion of the workhouse is located about 15 feet from the north edge and steps up to the tallest portion at 15 foot intervals. The south elevation is flat, hiding the circular bins. The surface is continuous with the bin construction, flowing around the corner bins. Numerous windows are placed on the facade in an orderly pattern especially in the workhouse, aligned horizontally and vertically except where undesirable. The location of windows on the south elevation below the workhouse corresponds to the spaces in between the bins. The walls are of concrete and have been painted white. A large sign, painted on the south elevation after 1948, has been whitewashed over since.

4. Structural system, framing: The bins are made of reinforced concrete that was poured using a special yoke to raise the wall forms for a continuous pour of concrete. The walls are about six inches thick. The workhouse is of steel frame construction with 15 foot wide bays, enclosed in concrete. Four 7'-6" steel trusses span the top of the bin below the distributing floor and carry the framing for the workhouse above. The train shed is of steel and iron frame construction 3 to 14 bays deep. The longitudinal bays are 19 feet over the receiving pits below and with two 12 ft. bays between.

5. Porches, stoops, balconies, bulkheads: An elevated conveyor belt 40 inches wide is connected to the distributing floor of the workhouse where it received the grain and conveyed it to the mills of the complex. It is housed in a steel structure spanning across to the "A" Mill near where the cupola originally was located, some 110 feet from the west side of the elevator. It is clad with metal siding as well as a metal roof, slightly pitched.

6. Chimneys: There are also a number of vents for the exhaust of dust from the loading and unloading processes.

7. Openings:

a. Doorways and doors: A cellar door appears on the north side, its date is unknown. The entry on the south side is in the middle where a smaller bin allows for an internal stairway and the main spout from the conveyor flow is located. A metal shack now encloses the door.

b. Windows and shutters: The original windows were 2 over 2 light double sash windows with metal trim and rough openings. Many of the window openings have been altered. Other windows have been added and the original glazing has been replaced by windows with horizontal louvers across them.

8. Roof:

a. Slope, coverings: The roofs of the bins are of concrete and slope slightly away frm the workinghouse in the center. The roof edge runs across the elevator tangential to the bins creating a continuous cap over the bins on the north, east and west sides. The workhouse also has a sloped roof, pitched to the north and south with a peak in the center of the highest portion. It is covered with a composition roofing material.

b. Signs, flagpoles: Two large signs facing east and west are located on top of the workhouse. They are about 30 feet high and are supported by steel trusses. They were in place as early as 1908 and read "GOLD MEDAL FLOUR" (Minnesota Historical Society Photographs). They were modified between 1920 and 1930 to read "GOLD MEDAL FOODS" but were returned to their original reading by 1935 (Minnesota Historical Society Photographs).

A flagpole is in the center of the top of the workhouse. It is approximately 45 feet tall. It appears to be original to the 1908 construction.

C. Description of Interior:

1. Floor plans:

a. Foundation: The car puller equipment is located in a room under the tracks. The hoppers at the bottom of the bins empty into three belt conveyors that run the short direction connecting to the longitudinal conveyor that runs east/west along the south edge. Three unloading pits,

beneath the train shed empty out into pits in the interstices on the south side connecting to the main belt conveyor. The unloading pits are also of concrete supported below on piles and slope steeply to the conveyor level. The train shed is supported on two rows of piles about 25 feet apart and a wall on the south edge the whole length of the shed. All foundations are of reinforced concrete.

b. Storage Bins: There are 15 circular bins. Fourteen are 24'-4" in diameter and one is 15'-0" in diameter. They rise continuously 100 feet from grade within the structure. They are arranged in 3 rows of 5 each with the smaller in the center of the southern row. They are spanned longitudinally by 4 large trusses. Spouting within the trusses leads from the top of the bins to the bottom of the distributing floor above.

c. Workhouse: There are 5 floors in the workhouse above; the distributing floor, scalper floor, garner floor, scale floor and head floor (from bottom to top). All are 6 bays long, each bay being approximately 15 feet in length. The bottom three floors are 3 bays wide and the top two floors two bays wide, each bay being approximately 15 feet in length. The truss floor below extends one bay to the north beyond the workhouse with spouting to the furthest row of bins.

1. Head Floor: It is approximately 15 feet from floor to ceiling. It held the elevator heads that brought the grain up to the top and started it on its journey down through the cleaning and treatment process.

2. Scale Floor: It is approximately 15 feet from floor to ceiling. It held 4 large hopper scales of 2000 bush capacity on the north half and 4 smaller pocket bins on the south.

3. Garner Floor: It is approximately 18 feet 10 inches from floor to ceiling. The central bay had 4 large hoppers equal to a complete bay. In the north bay the bottom of the pocket bins emptied into 2 cleaners that were 8'-2" high, 11' long by 6'-6" wide.

4. Scalper Floor: It is approximately 14 feet 10 inches from floor to ceiling. A series of 4 cleaners that are 8'-2" high, 11' long by 6'-6" wide are located below the hoppers above which empty the grain onto belts in the distributing floor below.

5. Oistributing Floor: It is approximately 18 feet from floor to ceiling. There are 4 large spouts that collect grain from the cleaners and direct it into the spouting in the floor that leads to the bins.

d. Stairways: A stair is located in the center of the south side of the No. 1 Elevator going up to the distributing floor. From there another stair ascends to the top of the workhouse. It is located in the south-east corner of the building. A passenger elevator goes up to the top of the workhouse along the south wall between the two most westernly bins.

D. Site:

1. General setting and orientation: The No. 1 Elevator is located east of the "A" Mill between the railroad tracks and First Street South. The Feed Mill, the Wheel House and the East Engine House are all situated between it and the "A" Mill. First Street rises to the east along the north side of the elevator. On the east is 8th Avenue leading to the river. The railroad tracks run east-west along the rear. The train shed, attached to the elevator, covers the first three railroad tracks. Two additional lines of tracks, separating it from the storage shed, also run east-west on the south side of the train shed.

2. Outbuildings: A small 10 x 10 foot concrete block shack stands to the east where the earlier wash house stood.

PART III. SOURCES OF INFORMATION

A. Original Architectural Drawings: The following plans are located at General Mills, Inc., Corporate Engineering, James Ford Bell Technical Center, Minneapolis, Minnesota.

Dwg. No.	Oescription	Date
-----	Elev #1-Barnett & Record	1902?
-----	W.C.Co. Plot of Property in Mill District	1905
-----	W.C.Co. Elevations of Minneapolis plant	--
23	Cleaners, Scalper Floor Plan	1907
23A	Leg Supports	1907
28	Train Shed Elevation	1907
29	Bldg. Elev. - River Side - So. End	1907
29A	Front Elevation & Oetail	1907
31	Train Shed Floor	1907
34	Cupola Girders	1907

36	Spout Opening	1907
-----	Hopper Details	19D7
42	Floor Openings	1907
83-493-1	Washburn Elev. Train Shed	1910
-----	Washburn Crosby Addition to Train Shed	--
558-3	Elev Annex, Arrg. for Bsort Conv.	1915
615	Wash Elev-Edmonds Auto Take Up "B" Leg	1917
617-1,2,3,5	Wash Elev - 1DO by Auto Scale	1917
82-651D,3	Washburn Elev #1 Drive Scheme	1917
82-676-1,2	Washburn Elev. Drier 3rd Floor	1918
-75	Washburn Elev #14 Niagara Rec. Shoe	1926
133-415-1	Proposed Bulk Screening	1926
239-1	#1 Elev. Bin Opening & Feeder Details	1928
81-278	W.C.Co. Elev. #1- Elevations	1930
133-419-1	Proposed Bulk Screening	193D
352-2	#1 Head House Switchboard Panel Details & As.	1932
354	#1 Head House Switchboard Assembly	1932
375-1	Ventilation System For Elev. Annex Bins	1933
-----	W.C.Co. Proposed Changed to Dust Coll. Systems	1933
308-1	Elev. #1, Bsmt. Industrial Conv. Drives	1935
123-305, 1-5	Elev #1, Electrical Plan, Schedule of Moto.	1935
133-419-1	Proposed Bulk Screen. Unload & Handle Syst.	1936
Dwg. #495-A	Proposed Consolid of Mpls. Pant Plot Plan	1941
133-515-1	Flow Diagrams Sections-Elevators to Mills	1941
-----	Bin Layout & Conv. Details	--
Job 638 Dwg. C-1	Elev. #1 Hopper & Scale	1956
Dwg. #C-2	Elev. #1 - Hopper and Scale Support	1956
Job #1098 Dwg.	#&-2 Property Plot Plan	1959
E-M 1-4	Main Switchboard, D-C Control Schematic	1962

B. Early Views: The early panoramic views do not show the No. 1 Elevator. Three 1945 photographs from the General Mills Archives, Minneapolis, Minnesota show the No. 1 Elevator and Train Shed.

C. Interviews:

Mr. Don Noel, Millright
3727 Rhode Island Avenue South
St. Louis Park, Minnesota 55426
(612) 938-5556

Mr. Bill Praus, Estimator, Coordinator
General Mills, Inc.
7232 Oakland Avenue South
Richfield, Minnesota
(612) 866-9D53

Mr. Walt Langley
Building Superintendent
Riverside Industries, Inc.
P.O. Box 1125
Minneapolis, Minnesota 55440

D. Bibliography:

1. Primary and unpublished sources:

Department of Inspections
City of Minneapolis
Building Permit Files 1884-1973

Archives
General Mills, Inc.
9200 Wayzata Boulevard
Golden Valley, Minnesota 55426

Corporate Engineering
James Ford Bell Technical Center
General Mills, Inc.
9000 Plymouth Avenue
Golden Valley, Minnesota 55424

Ben Miller
Riverside Industries, Inc.
P.O. Box 1125
Minneapolis, Minnesota 55440

Draft nomination, National Register of Historic Landmarks, Washburn-Crosby A Mill Complex.

2. Secondary and published sources:

A GUIDE TO THE INDUSTRIAL ARCHEOLOGY OF THE TWIN CITIES, The Society for Industrial Archeology of St. Paul, Minnesota Historical Society, 1983.

AMERICAN MILLER. p. 124 and 125, June 1878 THE MINNEAPOLIS HORROR.

Anfinson, Scott F., ARCHEOLOGICAL POTENTIALS ON THE WEST SIDE OF THE CENTRAL MINNEAPOLIS WATERFRONT. St. Paul, Minnesota; Minnesota Historical Soceity, 1984.

EVENTUALLY NEWS, THE, General Mills, Inc., Minneapolis, Minnesota Vol. #1, 10/29/19, Vol. #1, 4/28/20,

Fuller, M.A., MAP OF THE MANUFACTURING INTERESTS AT THE FALLS OF ST. ANTHONY. A.J. Reed, Lithographer, St. Paul, Minnesota, 1873.

Kane, Lucille M., THE WATERFALL THAT BUILT A CITY. St. Paul, Minnesota Historical Society, 1966.

Kane, Lucille and Ominsky, TWIN CITIES - APICTORIAL HISTORY, Minnesota Historical Society.

RASCHER INSURANCE MAPS OF MINNEAPOLIS, Chicago, Map Publishing Company, 1890, 1892.

SAINT ANTHONY FALLS REDISCOVERED. James Berman, ed., Minneapolis: Riverfront Development Coordination Board, City of Minneapolis, 1980.

SANBORN INSURANCE MAPS OF MINNEAPOLIS, New York: Sanborn Insurance Company, 1885, 1904, 1912, 1949.

Prepared by:
Lorene Lehmann,
Jill Fuerstneau and
Ben Metzdorff
University of Minnesota
March 1986

PART IV. PROJECT INFORMATION

This project was prepared as a class project for Architecture 5142, Historic Building Research and Documentation, a class offered in the School of Architecture and Landscape Architecture at the University of Minnesota, Minneapolis, Minnesota. The class project was prepared under the direction of Professor Foster W. Dunwiddie in cooperation with the State Historic Preservation Office of the Minnesota Historical Society, Saint Paul, Minnesota. Historical data was compiled by Lorene Lehmann, Jill Fuerstneau, and Ben Metzdorff, University of Minnesota, March 1986.